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# Meeting Your Match: How Attractiveness Similarity Affects Approach Behavior in Mixed-Sex Dyads

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*This experimental study investigated approach behavior toward opposite-sex others of similar versus dissimilar physical attractiveness. Furthermore, it tested the moderating effects of sex. Single participants interacted with confederates of high and low attractiveness. Observers rated their behavior in terms of relational investment (i.e., behavioral efforts related to the improvement of interaction fluency, communication of positive interpersonal affect, and positive self-presentation). As expected, men displayed more relational investment behavior if their own physical attractiveness was similar to that of the confederate. For women, no effects of attractiveness similarity on relational investment behavior were found. Results are discussed in the light of positive assortative mating, preferences for physically attractive mates, and sex differences in attraction-related interpersonal behaviors.*

**Keywords:** *physical attractiveness; similarity; interpersonal behavior; mixed-sex dyads; assortative mating*

Physical attractiveness has a great impact on social processes, in particular on the creation of romantic relationships. One of the most confronting conclusions for many is perhaps not even that attractive people earn more salary (Frieze, Olson, & Russell, 1991) or receive more free drinks in clubs but that good-looking people often also have partners with the best looks. This idea is

illustrated by the fact that Angelina Jolie (voted sexiest woman alive by readers of *Esquire* magazine in 2004) and Brad Pitt (voted sexiest man alive by readers of *People* magazine in 2000) are a couple at the time of the writing of this article. Empirical studies confirm that people's attractiveness is positively related to the attractiveness of their partners (Feingold, 1988; McKillip & Reidel, 1983). The question arises whether and how similarity in attractiveness affects people's behaviors in the earliest phases of opposite-sex relationships.

When men and women meet for the first time, physical attractiveness is without doubt important. More important, we argue that similarity in attractiveness between two opposite-sex partners impacts the approach behavior by men and women. Specifically, we propose

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that attractiveness similarity determines relational investment behavior, which partners use as a strategic device to signal that they want the relationship to intensify. Because men and women differ in their strategies to attract a mate (Grammer, Kruck, Juette, & Fink, 2000), we predict that the effects of attractiveness similarity on approach behavior are moderated by sex. An investigation of approach behavior in the early stages of romantic relationships is important to increase our understanding of the role of attractiveness in the development of romantic relationships in general and the effects of attractiveness similarity more specifically. Therefore, we investigated whether similarity in attractiveness predicts approach behavior, operationalized as relational investment behavior, during the first encounters between men and women.

### Attractiveness Similarity

Within-couple similarity in attractiveness has been described as a form of *positive assortative mating* (e.g., Thiessen & Gregg, 1980). Whereas *assortative mating* describes systematic patterns of nonrandom mating, the adjective *positive* narrows it down to nonrandom mating between individuals who are similar on one or more aspects. Indications for positive assortative mating among humans have been found repeatedly in correlational research in which similarity between partners concerned factors such as religion, attitudes, and personality characteristics (Botwin, Buss, & Shackelford, 1997; Feng & Baker, 1994; Little, Burt, & Perrett, 2006; Vandenberg, 1972), and, important in the present context, physical attractiveness (Chambers, Christiansen, & Kunz, 1983; Murstein, 1972; Price & Vandenberg, 1979; for a meta-analysis, see Feingold, 1988). Positive assortative mating seems to be functional in that higher degrees of similarity are associated with higher levels of relational and marital success (Cavior & Boblett, 1972; Keller, Thiessen, & Young, 1996; Little et al., 2006; Vandenberg, 1972; White, 1980) and with greater genetic relatedness, thus facilitating inclusive fitness (Thiessen & Gregg, 1980).

To explain positive assortative mating, ethologists offer two explanations: *type preference* and *homotypic preference* (Burley, 1983). Type preference refers to partner preferences shared by all individuals within one group; therefore, assortment as a consequence of type preference occurs as a logical outcome of selection preference. Concerning physical attractiveness, it is hypothesized that humans share a preference for high physical attractiveness in partners, which is one of the primary indicators of mate quality (Rhodes, 2006). Assortment occurs automatically, as people select the attractive partners first and do not consider less attractive partners. Thus, according to the *type preference hypothesis*,

the level of physical attractiveness of available partners determines positive assortment on physical attractiveness. Consistent with this reasoning, people prefer highly attractive partners to partners of a lower level of physical attractiveness, regardless of their own attractiveness (e.g., Brislin & Lewis, 1968; Curran & Lippold, 1975; Huston, 1973; Kiesler & Baral, 1970; Walster, Aronson, Abrahams, & Rottman, 1966).

The homotypic preference explanation, which we refer to as the *matching hypothesis*, holds that partner preferences vary as a function of people's own characteristics. Concerning physical attractiveness, it suggests that people adjust their preference for physically attractive mates on the basis of their own attractiveness. Originally, this adjustment was described as a change in aspiration level (Walster et al., 1966) and was assumed to be a trade-off between potential success rates of attainment attempts and the mate value of the potentially attained partners. In their seminal study, Berscheid, Dion, Walster, and Walster (1971) found support for positive associations of people's own attractiveness and their mate preferences (both in terms of partner characteristics and actual dating choices from a number of pictures), with more attractive people preferring more attractive partners and choosing more attractive dates. Also, Folkes (1982) found that higher degrees of attractiveness similarity were positively related to the number of dating steps, with more similarly attractive partners continuing the dating process longer. These findings have been interpreted as evidence for the matching hypothesis.

Whether this evidence provides clear support for the matching hypothesis, however, remains unknown. First, except for the early studies, to our knowledge no studies have been able to confirm this hypothesis.<sup>1</sup> Second, Berscheid et al.'s (1971) study showed that even less attractive people's partner preferences strongly favored highly attractive partners. This main effect was so strong that Kalick and Hamilton (1986) concluded that "it becomes apparent, that the choice of an attractive partner far outweighed the tendency to match on attractiveness" (p. 674). These authors conducted computer simulations of partner selection in which fictional individuals had a shared preference for highly attractive mates. The simulations showed that the shared preferences for attractive mates resulted in correlations of attractiveness within computer-simulated couples that were of similar sizes to those observed among existing couples (around .50). This finding therefore supports the type preference hypothesis. Finally, it is important to mention that Berscheid et al. hypothesized that increased chances of rejection (manipulated by letting participants believe that their chosen dating partners were able to reject them as a date, in contrast to a condition in which they were not) would facilitate self-report choices for similarly attractive dating partners;

however, this manipulation did not affect their choices. This finding ran counter to the idea of a matching phenomenon based on malleable partner preferences.

In sum, evidence supporting the matching hypothesis is weak at best. Nevertheless, we propose that it is premature to discard the idea that one's own attractiveness influences mate-selection processes. Specifically, we propose that one's own attractiveness influences the way others respond, and because not all people can get what they want and will try and avoid being turned down, they will adjust their approach behavior as a function of attractiveness similarity. Importantly, we propose that this type of adjustment will be detectable in behavior people exhibit during the early stages of interactions rather than in their overall preferences for attractive mating partners. However, as discussed later, this is not the case for women because of their more cautious communication strategies in first encounters.

### *A Behavioral Approach to Attractiveness Similarity*

Intimate relationships usually begin with at least one person approaching the other or communicating attraction. In contrast to self-reports of attraction to the other, we suggest that this initial behavior is influenced by principles of attractiveness similarity. Indeed, behavior in heterosexual mating situations seems the product of personal preferences and contextual constraints (Berry & Miller, 2001). In the context of interactions between opposite-sex partners, initial approach behavior is likely to vary as a function of the probability of successful courtship. This probability should, at least partly, be determined by a person's own desirability as a mate. The display of approach behavior toward a potential mate thus should depend on one's own physical attractiveness and the other person's physical attractiveness, or as we claim, attractiveness similarity between two potential mating partners. The adjustment of approach behavior as a function of similarity in attractiveness makes mate-attainment strategies more efficient because it diminishes the risk of wasting resources and efforts by pursuing a mate who will turn one down eventually.

A core aspect of the proposed behavioral approach to attractiveness similarity is that it considers innate mate preferences for physical attractiveness as independent from one's goals and motivations. More specifically, a person's own attractiveness comparative to the partner's attractiveness determines the chances of mating success and should thus affect mating-related behavior, but it is not expected to affect mating preferences (see also Berry & Miller, 2001). Indeed, all people prefer physically attractive partners. Mating-related motivations and behavior (e.g., approach behavior toward a potential

mate), on the contrary, should be influenced by individual factors, such as own physical attractiveness. Importantly, this factor should determine whom to approach and how to approach them.

This approach to the matching phenomenon is different from the earlier mentioned aspiration level explanation (Walster et al., 1966; see also Todd & Miller, 1999) and the chances of rejection explanation (Berscheid et al., 1971), which both assume that people adjust their preferences on the basis of feasibility. Notably, existing studies found no evidence for changes in participants' preferences for attractive mates as a function of changed aspiration levels or of chances of rejection. Although this lack of finding sheds doubts on these two explanations, it is consistent with our suggestion that preferences and motivations are independent from each other. Existing studies on the matching hypothesis measured mating preferences but were unable to assess people's individual motivations. For example, participants typically rate their liking for (virtual or real) opposite-sex persons and the extent to which they desire this person as a date, or they choose their most preferred dating partner from a number of potential dating partners. These measures gauge preferences and are less likely to reflect individual motivations. People's behaviors in interactions with potential mates should reflect their motivations. Behavior, in contrast to self-reports, is less susceptible to conscious deliberation (e.g., Dijksterhuis & Bargh, 2001) and is influenced by automatic associations with the goal, in our case, the potential mate (Chen & Bargh, 1999; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997). Furthermore, approach behavior toward a potential mate has immediate interpersonal and personal consequences that vary dynamically as a function probability of success. Thus, we propose that to adequately test whether attractiveness similarity is influential in the mating process, actual approach behavior is better suited to reflect these influences than self-reported preferences.

### *Sex Differences in Approach Behavior*

Men and women differ greatly in their strategies to attract a mate, that is, whether and how to approach desirable opposite-sex partners. According to the parental investment theory (Trivers, 1972), this sex difference is theorized to have adaptive benefits. Because reproduction has more profound consequences for women than for men (e.g., pregnancy, lactation), women are more selective and cautious in choosing their mating partner. To illustrate, women are more reserved as to when and how to communicate attraction (e.g., Baumeister & Vohs, 2004; Clark, Shaver, & Abrahams, 1999; Grammer, 1990). Such a restraint in the communication of attraction is assumed to preserve the level of



control women have over the outcome of the interactions. Furthermore, women's cautiousness in communication might compensate for the relative ease with which men attribute sexual motivations to women's behaviors (Abbey, 1982; Henningsen, 2004; Levesque, Nave, & Lowe, 2006). In line with this reasoning, error management theory (Haselton & Buss, 2000) proposes that the worst that can happen to men when showing attraction to a woman is rejection (i.e., a *false positive error* or *false alarm*) but would overall increase their chances of success (i.e., a *hit*). For women, false-positive errors need to be avoided because they will jeopardize the woman's vulnerability to violence, damage her reputation and mate value, and may cause single motherhood because of fathers' unwillingness to invest. These differences in risk associated with the communication of attraction converge to suggest that although men act on their feelings of attraction, women adopt more passive and cautious approach strategies. Specifically, given equal levels of attraction toward potential mates, women compared to men would be less likely to communicate this attraction. Empirical evidence indicates that, indeed, women are less likely than men to send signals of attraction in opposite-sex dyads (Grammer, 1990; Grammer et al., 2000; Van Straaten, Engels, Finkenauer, & Holland, 2008; Van Straaten, Holland, Finkenauer, Hollenstein, & Engels, in press). Therefore, we predicted sex differences in approach behavior. For women, we expected no relations between attractiveness similarity and approach behavior in brief first interactions. Attractiveness similarity was expected to affect approach behavior of men only. We refer to these predictions as the *sex-moderated matching hypothesis*.

### Research Overview

The overarching premise guiding the present work is the claim that attractiveness similarity is consequential, influencing the manner in which people approach potential mating partners. In our behavioral study, we manipulated the confederate's attractiveness (high vs. low). Single participants' approach behaviors in brief interactions with confederates were videotaped and subsequently rated by independent observers, and other observers rated the participants' physical attractiveness. In addition, the participants rated their interest in dating the confederate.

Previous analyses of part of this data set indicated that the participants reported higher levels of dating interest in the high (vs. low) confederate attractiveness condition (Van Straaten et al., in press), thus reflecting a general preference for physical attractiveness. For the current study, we additionally hypothesized that reported dating interest would not be moderated by participants'

own attractiveness (type preference hypothesis). Furthermore, we predicted that sex would moderate the links between attractiveness similarity and approach behavior (sex-moderated matching hypothesis). For men, we predicted that similarity (vs. dissimilarity) in attractiveness would lead to more approach behavior. For women, no effect of attractiveness similarity on approach behavior was predicted.

### Approach Behavior as Relational Investment

We operationalized approach behavior in interactions between men and women as *relational investment*. We use the term *relational* to indicate that in interactions between single men and women, behavior often signals sexual or romantic interest (Henningsen, 2004) and must be distinguished from merely positive social behavior. We used the term *investment* to indicate tangible (e.g., money, time) or nontangible (e.g., emotional investment) behavioral efforts people make to get to know the other person and signal that they want the relationship to develop further. In the present study, we operationalized relational investment as behavior reflecting warmth, interpersonal interest, activity, positivity, and responsiveness. These behaviors have been shown to facilitate the ease of interactions and the exchange of personal information, to communicate positive interpersonal affects, and to be enacted when people want to make a positive impression on another person. For example, responsiveness characterizes effective communication in couples (Reis, Clark, & Holmes, 2004) and has been related to interpersonal approach (Mottet & Richmond, 1998).<sup>2</sup> More important, in combination with the display of interpersonal interest (Clark et al., 1999), it signals the individual's willingness to invest time and effort in another person. Positivity and activity signal attraction (e.g., McAdams, Jackson, & Kirshnit, 1984; Tickle-Degnen & Rosenthal, 1990). Warmth has been associated with a positive development of interactions and relationships (Bayes, 1972; Matthews, Wickrama, & Conger, 1996). Consequently, we employed these five indicators of relational investment as a proxy for approach behavior toward a potential mate.

We used global ratings of participants' behaviors instead of microcodings of behavior. First, sexual attraction or investment are currently lacking unambiguous micro-level behaviors. For example, Grammer, Honda, Jutte, and Schmitt (1999) did not find nonverbal behavioral correlates of attraction. Grammer (1990) found complex combinations of nonverbal signals of attraction for women. Furthermore, nonverbal behaviors related to attraction often were investigated among existing couples rather than among strangers (e.g., Gonzaga, Keltner, Londahl, & Smith, 2001; Gonzaga,

Turner, Keltner, Campos, & Altemus, 2006). Even among these couples, the prevalence of clear nonverbal signals for attraction was low (Gonzaga et al., 2006). Instead, global behavioral ratings of behavioral investment in mixed-sex interactions as rated by observers have been widely used (e.g., Gottman, 1979; Langlois et al., 2000; Tickle-Degnen & Rosenthal, 1990). These ratings provide information about behaviors that unfold over longer intervals. Additionally, observers' ratings of participants' behaviors are likely to reflect the impressions the mating targets may have of the other person's behavior.

## METHOD

### *Participants and Design*

The experiment on which the analyses of the current study were originally based consisted of 115 undergraduate students of the Radboud University Nijmegen (see Van Straaten et al., in press). Ninety-nine participants (86%) were included in the current study (51 men). Five participants were excluded because attractiveness ratings were missing. Eleven participants were excluded because the audio recordings were either missing or of insufficient quality to reliably rate verbal behavior. The participants were between 18 and 25 years old (men:  $M = 20.57$ ,  $SD = 1.58$ ; women:  $M = 20.47$ ,  $SD = 1.64$ ). All participants were single and heterosexual, and participated in partial fulfillment of course requirements or for a small financial reward (€5). The experiment consisted of a 2 (sex participant)  $\times$  2 (confederate's attractiveness condition: low vs. high) between-subjects design. In addition, this design included a continuous independent variable representing participant's attractiveness as rated by observers.

### *Procedure*

Undergraduates were recruited to participate in the study that ostensibly concerned the daily life and preferences of contemporary students in which they would have a discussion with another student. Participants were paired with an unknown confederate of the opposite sex who was of the same age. Eleven confederates were selected before the experiment on the basis of their physical attractiveness (relatively low or high), as rated by a group of students from a different university. Each condition and each sex consisted of 2 or 3 confederates. Table 1 depicts the mean ratings of the confederates' physical attractiveness as evaluated by the participants with whom they interacted. The confederates in the high attractiveness condition were rated as physically more attractive than the confederates in the low attractive

**TABLE 1:** Means (Standard Deviations) of Physical Attractiveness Evaluations as a Function of Sex Participant and Confederate's Attractiveness Condition

Condition	Men	Women	Total
Low	4.20 (1.08)	3.78 (1.17)	3.99 (1.14)
High	6.49 (0.92)	5.92 (1.20)	6.21*** (1.10)
Total	5.34 <sub>a</sub> (1.52)	4.83 <sub>b</sub> (1.59)	5.09 (1.57)

SOURCE: From Van Straaten, Engels, Finkenauer, and Holland (2008).

NOTE: Evaluations on a 9-point scale. Condition refers to the attractiveness level of the confederate. Different subscripts indicate a within-row difference at  $p < .05$ . No two-way interaction effects were found.

\*\*\* $p < .001$ .

condition,  $F(1, 95) = 128.79$ ,  $p < .001$ ,  $\eta_p^2 = .51$ . A main effect of participant sex showed that men rated female confederates as more attractive than women rated male confederates,  $F(1, 95) = 7.85$ ,  $p = .006$ ,  $\eta_p^2 = .08$ . Notably, no interaction effects between sex participant and confederate's attractiveness condition were found ( $F < 1$ ).

The confederates were trained to initially interact in a positive way with all participants but to gradually adjust in a natural way to the behavior of the participant to create realistic interactions in which mutual adjustments take place. No participants expressed doubts about the roles of the confederates.

First, each participant read a short description of the study, in which anonymity was guaranteed, and signed a full consent form. Then, they received a list with several characteristics of the confederate, among which was his or her relational status, which was set as "single." All participants received the same list of characteristics. Because the participants had answered similar questions during the recruitment phase (to select participants by sexual preference, relational status, and age), they were told that "the other participant" received the same type of information about them. This cover story was created to subtly present the fact that the confederate was also single.

The experimenter guided participants into a comfortable room in the university building, which looked like a normal bar, in which the confederate was already present. This room was previously used in empirical studies to create an atmosphere of an everyday social interaction context (Bot, Engels, & Knibbe, 2005; Van Straaten et al., 2008). Confederate and participant were introduced and assigned to seats opposite each other. They were instructed to discuss a given topic (randomly, either their preferences for specific movies and actors or

their own nightlife) for 5 min. The experimenter left the room and returned after 5 min, escorting the participant to a separate room to fill out a questionnaire on the interactions and the confederate.

Two peephole cameras (well hidden in lamps behind each person) recorded the behaviors of participant and confederate during the instruction and the discussion phases. After all data were collected, participants were fully debriefed and asked for consent to use the video recordings. No participant objected to the use of their observations or data.

### Measures

*Participants' attractiveness.* Three opposite-sex undergraduates observed short 3-s clips<sup>3</sup> of the instructions phase (volume turned off). They rated the participants' physical attractiveness separately for facial and body attractiveness ( $r = .71$ ,  $p < .001$ , within raters) on a 9-point scale (1 = *very unattractive*, 9 = *very attractive*). The two ratings were averaged to obtain a general measure of physical attractiveness. Interrater agreement was high ( $\alpha = .91$ ), so the measures from all three observers were collapsed. The mean attractiveness rating of the participants was  $M = 4.61$ ,  $SD = 1.33$ , range = 2.00 to 7.89.

*Relational investment.* Four female independent raters observed all discussion recordings of the participants and the confederates, respectively. They had been intensively trained to rate the behaviors of the observed persons on the five indicators of relational investment. After a general discussion and some examples of interactions, the coders rated a set of 10 participants. Their ratings were compared and discussed. During these discussions most of the time was spent on reaching a shared frame of reference for each indicator. Example sessions were selected to represent low, medium, and high levels of each indicator. Then, each coder rated a second set of 10 participants. For this second set the observers' ratings yielded a reliable average correlation of .83 (range = .59 to .94), with the lowest reliability of .59 for "activity." All other indicators showed reliabilities of .80 or higher. The recordings were randomly distributed over the four raters, and one rater rated each dyad. Because of the difficulty to validly rate relational behavior by seeing only one person (some behavior only obtains social relevance in the context of the interaction), they always viewed recordings of both confederate and participant. By asking the observers to attend to and rate one person at a time, interdependence of ratings was avoided. Importantly, the participant was always rated first.

The measure of relational investment consisted of five semantic differential ratings of behaviors: warmth, interest, activity, positivity, and responsiveness. For example,

*warm* was defined to indicate "emphatic behavior, attempts to take the other person's perspective, making eye contact, and express understanding (e.g., through smiling and nodding)," and the semantic opposite *cold* was defined as "no expressions of empathy, not reacting to affective utterances, and avoiding eye contact." Although we attempted to measure five specific parts of relational investment, some overlap between the definitions of the components could not be avoided. For a complete description of all components of relational investment, see the appendix. All semantic differentials included a 9-point response scale with the labels on the opposite sides (e.g., 1 = *cold*, 9 = *warm*). A principal component analysis revealed one underlying component that explained 58% of the variance. Given the high interrelations among the five indicators ( $\alpha = .87$ ), we used the average score to indicate relational investment. Because the distribution of the variable was skewed (high means), squaring was used to normalize the variable.

*Dating interest.* We assessed dating interest by asking participants after the discussion whether they would like to go on a date with their interaction partner (1 = *absolutely not*, 9 = *absolutely*).

## RESULTS

Continuous variables were standardized for all analyses.

### Descriptive Statistics

First, we inspected means and distributions of relational investment and its components during the mixed-sex interactions and tested for possible sex differences. See Table 2 for the raw means. Men ( $M = .08$ ,  $SD = .95$ ) and women ( $M = -.08$ ,  $SD = 1.06$ ) were rated as showing equal relational investment,  $t(97) = .79$ , *ns*.<sup>4</sup> Furthermore, the variance of relational investment was equal for both sexes. Thus, overall, men and women did not display obvious differences in their approach behavior when interacting with opposite-sex confederates. Table 3 shows the correlations among participant's attractiveness, relational investment, and dating desire. Only participant's attractiveness and relational investment were correlated, which is explored in later analyses.

### Dating Interest

The first part of our investigation involved dating interest as a function of physical attractiveness of both confederate and participant. The effects of confederate's attractiveness condition on dating interest reported by the participants in the current sample was investigated



**TABLE 2:** Descriptive Statistics of Relational Investment and Underlying Components as a Function of Sex Participant

Variable	Men (n = 51)		Women (n = 48)		Total (n = 99)	
	M	SD	M	SD	M	SD
Relational investment	6.06	1.38	5.79	1.59	5.93	1.49
Components						
Negative–positive	6.57	1.39	6.40	1.65	6.48	1.51
Passive–active	6.57	1.43	5.98	1.71	6.28	1.59
Cold–warm	6.08	1.51	5.92	1.82	6.00	1.69
Not responsive–responsive	5.96	1.74	5.85	1.87	5.91	1.80
Indifferent–interested	5.14	2.00	4.72	1.95	4.94	1.98

NOTE: Semantic differentials on a 9-point answering scale.

**TABLE 3:** Pearson and Partial Correlation Matrix of Independent and Dependent Variables

	1	2	3
1. Attractiveness participant	–	–.04(–.05)	.25*(.25*)
2. Dating desire	–		–.03(–.05)
3. Relational investment			–

NOTE: Correlations in parentheses are partial correlations controlling for confederate's attractiveness condition.

\* $p < .05$  ( $df = 96$ ).

in the earlier study by Van Straaten et al. (in press). As can be seen in the following regression analysis, this effect was strong and similar for men and women. For the purpose of the present study, we tested the possible moderation of the participant's own attractiveness in this relation.

Therefore, we conducted regression analyses (see Table 4) that included sex participant, participant's attractiveness, and confederate's attractiveness condition (Model 1), all two-way interaction terms (Model 2), and the three-way interaction term (Model 3) to predict dating interest. The analyses revealed the mentioned main effect of confederate's attractiveness condition, with more reported dating interest in the high confederate's attractiveness condition, and the main effect of sex participant indicating that women's dating interest was lower than men's. Model 2 explained marginally significantly more variance, caused by the two-way interaction effect of confederate's attractiveness condition and participant's attractiveness. Sex participant (Model 3) did not moderate these effects. Figure 1 depicts the estimated means of the found interactions. Simple slope analyses showed a marginal decrease in reported dating interest if participants were more attractive in the low confederate's attractiveness condition ( $B = -.24$ ,  $SE = .14$ ,  $t = -1.73$ ,  $p = .08$ ), as opposed to a (nonsignificant) increase in the high confederate's

attractiveness condition ( $B = .15$ ,  $SE = .11$ ,  $t = 1.28$ ,  $p = .20$ ). Because of the weak simple effects, interpreting them is not entirely justified. Therefore, the interaction effect, which shows opposite effects in confederate's attractiveness conditions, can be most easily interpreted in terms of similarity of attractiveness. That is, if attractiveness similarity was high (low/low or high/high attractiveness combinations), higher dating interest was reported than if attractiveness similarity was low (low/high or high/low combinations). Together, these findings support the type preference hypothesis and, contrary to our expectations, provide support for the traditional matching hypothesis, that is, matching effects on preferences.

### Relational Investment

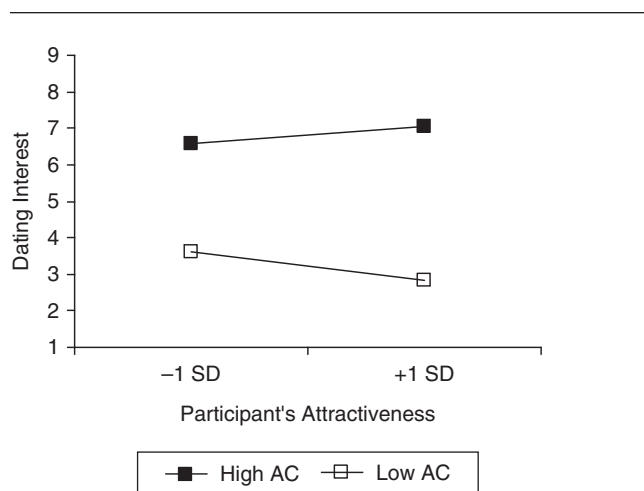
Next, we tested whether attractiveness similarity led to an increase in relational investment and, importantly, whether this effect was moderated by sex. Regression analyses with sex participant, confederate's attractiveness condition (low vs. high), and participant's attractiveness (in Model 1), all two-way interaction terms (Model 2), and the three-way interaction term (Model 3) were conducted to predict ratings of relational investment. Model 1 explained 7% of variance but was only marginally significant, which was accounted for by a main effect of participant's attractiveness. Model 2 was significant, caused by an interaction between sex participant and participant's attractiveness, and an interaction between participant's attractiveness and confederate's attractiveness condition. However, the expected Sex Participant  $\times$  Participant's Attractiveness  $\times$  Confederate's Attractiveness Condition three-way interaction qualified the two-way interactions (see Figure 2 for an illustration). Simple slope analyses showed that physically attractive women were rated higher on relational investment than were less attractive women, irrespective of the confederate's attractiveness condition (more attractive women:  $B = .42$ ,  $SE = .21$ ,  $t = 2.06$ ,  $p = .04$ ; less attractive women:  $B = .51$ ,  $SE = .17$ ,  $t = 2.93$ ,  $p = .004$ ).

**TABLE 4:** Linear Regression Analyses Predicting Dating Desire and Relational Investment as a Function of Sex Participant, Confederate's Attractiveness Condition, and Participant's Attractiveness

Model (df1, df2)	Dating desire							Relational investment						
	$R^2_{change}$	$F_{change}$	B	SE	$\beta$	$t$	$p$	$R^2_{change}$	$F_{change}$	B	SE	$\beta$	$t$	$p$
Model 1 (3, 95)	.29	12.70***						.07	2.37 <sup>†</sup>					
SP			−0.36	.18	−.01	−2.09	.04			−0.16	.20	−.08	−0.80	.43
CAC			1.03	.18	.51	5.87	< .001			0.04	.20	.02	0.22	>.50
PA			−0.01	.09	−.18	−0.14	> .50			0.25	.10	.25	2.53	.01
Model 2 (3, 92)	.05	2.39 <sup>†</sup>						.11	4.04**					
SP × CAC			−0.47	.34	−.20	−1.38	.17			−0.20	.38	−.08	−0.54	.59
SP × PA			0.08	.12	.08	0.66	> .50			0.31	.14	.31	2.35	.02
CAC × PA			0.38	.18	.29	2.20	.03			0.49	.19	.38	2.55	.01
Model 3 (1, 91)	.00	0.00						.04	4.45*					
SP × CAC × PA			0.01	.35	.01	0.04	> .50			−0.80	.38	−.43	−2.11	.04

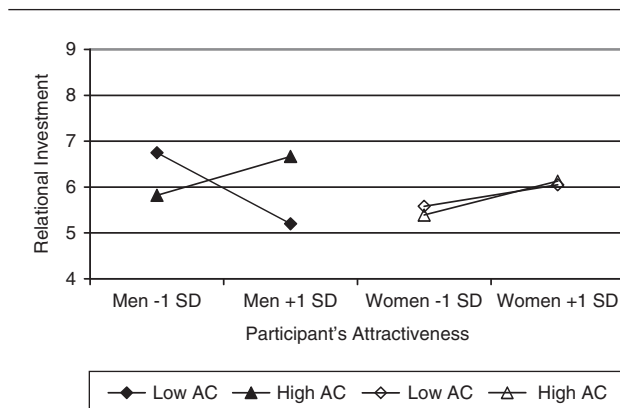
NOTE: SP = sex participant (0 = *man*, 1 = *woman*); CAC = confederate's attractiveness condition (0 = *low*, 1 = *high*); PA = participant's attractiveness (continuous).

<sup>†</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Figure 1** Dating interest as a function of participant's attractiveness and confederate's attractiveness condition (AC).

For men an interaction between participant's attractiveness and confederate's attractiveness condition emerged ( $B = .88$ ,  $SE = .26$ ,  $t = 3.33$ ,  $p < .001$ ). In the high confederate's attractiveness condition, we found a positive relation between participants' own attractiveness and relational investment ( $B = .39$ ,  $SE = .17$ ,  $t = 2.33$ ,  $p = .02$ ), although this relation was negative in the low confederate's attractiveness condition ( $B = -.49$ ,  $SE = .21$ ,  $t = -2.40$ ,  $p = .02$ ).

These results confirm the idea that men show more approach behaviors when interacting with women of a similar level of attractiveness. Women, however, do not seem to let similarity in attractiveness influence their approach behavior during interactions, although their dating interest varies strongly as a function of the

**Figure 2** Relational investment as a function of sex participant, confederate's attractiveness condition (AC), and participant's attractiveness.

NOTE: Relational investment ranged from 1 to 9.

physical attractiveness of their male interaction partner, thus confirming the sex-moderated matching hypothesis.

### Effects of Differential Treatment

The results on participants' relational investment might to some extent be due to differential treatment by the confederates as a function of attractiveness of the participant. Correlations between participants' and confederates' relational investment behaviors were  $r(98) = .53$ ,  $p < .001$ . Therefore, we conducted the same analyses as reported previously while controlling for the relational investment behaviors of the confederates. The analyses revealed the same pattern of results.

## DISCUSSION

The current study provides the first interpersonal behavioral indications for attractiveness-matching effects in mixed-sex dyads. As predicted, the results for observed behavior differed from those on self-reported dating interest. Men and women's dating interests reflected the general preference for highly attractive partners of both sexes, in line with the type preference hypothesis. In contrast, the type preference hypothesis cannot explain men's relational investment behaviors, but the attractiveness similarity effects can. That is, men's relational investment behaviors are consistent with the sex-moderated matching hypothesis. For high (vs. low) attractive confederates, men displayed more behaviors indicative of relational interest and effort, however, only if they themselves were attractive. For low-attractive confederates, the less attractive men displayed more relational investment behaviors than the more attractive men. Furthermore, as predicted, women's relational investment behaviors did not vary as a function of attractiveness similarity. This pattern of results is consistent with the sex-moderated matching hypothesis. The fact that women's dating interest was predicted by the confederate's attractiveness and not by their relational investment provides support for the suggestion that women are more reserved in the communication of attraction to potential mates (e.g., Baumeister & Vohs, 2004; Clark et al., 1999; Grammer, 1990).

Replicating earlier findings regarding people's preferences for physically attractive others, our work again demonstrated that physical attractiveness in a potential mating partner causes increase of self-reported dating desire. And in an important extension of earlier findings, our work revealed that attractiveness similarity causes men, but not women, to engage in approach behaviors by showing relational investment, thereby signaling the potential mates that they want the relationship to develop further.

Together these findings are consistent with the probability-based approach mechanism for behavior and mate preferences for physically attractive partners. The probability-based mechanism would cause people to refrain from acting impulsively on their feelings of attraction for the other if the chances of rejection are high (i.e., when the mating partner is physically more attractive than the self; a false alarm) or if the chances of winning a partner of higher attractiveness are substantial (i.e., if the mating partner is physically less attractive than oneself). This contradicts the idea that attractiveness similarity in couples is a mere by-product of more attractive individuals turning down less attractive individuals because they want to attract a more attractive partner, which is predicted by the type preference models

(Kalick & Hamilton, 1986) and market models of human dating (Todd, 1997). Whether chances of rejection affect approach behavior needs further investigation. Perhaps chances of rejection should not be considered as opportunities to reject, as they were operationalized in the study by Berscheid et al. (1971), but as the perception of probabilities of success that determine which mates to approach.

An interpersonal feedback process is likely to contribute to shaping such probability-based behaviors. Over time individuals receive positive and negative feedback regarding their approach behavior from the opposite-sex others. This feedback is likely to depend, at least in part, on their own attractiveness. Internalization of this interpersonal feedback is highly probable (cf. Takeuchi, 2006). Although initially people's approach behaviors may mainly be a function of their goal to attract physically attractive opposite-sex others (i.e., the goal matches their preferences), over time the number and intensity of positive and negative feedback will influence the standard of this goal (i.e., divergence of the goal and preferences) and ultimately the goal-related behavior (i.e., approach behavior toward potential mates). In the light of the so-called positive-negative asymmetry effect observed in the literature—the finding that negative information is weighted more strongly than positive information (for a review, see Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001), one would expect negative interpersonal feedback to cause stronger adjustment of approach behaviors than positive interpersonal feedback.

In line with this suggestion, recent social cognitive research shows that if a goal is repetitively accompanied by negative affects, people experience less motivation and exert fewer efforts to attain the goal (Aarts, Custers, & Holland, 2007). A goal that is accompanied by positive affect may lead to no changes in motivation or effort (i.e., people merely continue what they are doing because all is well) or, if any, to an increase in motivation and effort to attain the goal. Extending these findings to our research suggests that highly attractive people may receive positive feedback on their approach behavior toward highly attractive opposite-sex others. Conversely, less attractive people may receive negative feedback on their approach behavior toward highly attractive others but may receive neutral or positive feedback on their approach behavior toward opposite-sex others of equal attractiveness. For less attractive people, approach behavior toward potential mates of similar attractiveness is thus reinforced. This process resembles the computer simulation model by Todd and Miller (1999), who included learning mechanisms on the basis of successful and unsuccessful courtship in their model. This model resulted in reasonable matching

on mate value within couples and, importantly, after a more realistic number of dates than the model by Kalick and Hamilton (1986) that did not include learning mechanisms but relied only on shared attractiveness preferences.

Approach behavior that follows the rules of the type preference and market models in the mating context can be expected to lead to inefficient mate-attainment strategies. These rules imply continuous “bargaining” with potential mates and a high number of rejections. In contrast, the proposed process of internalization of positive and negative interpersonal feedback predicts reliable determinations of feasible levels of attractiveness in potential partners, which in turn determine approach behavior. Such a process should facilitate mate attainment of equal attractiveness and diminish the risk of wasting resources and effort by pursuing a mate who is more attractive than oneself and who will reject eventually. Because no effects of potential rejection or differences in aspiration levels on the self-report of attraction (or dating desirability) have been found (Berscheid et al., 1971; Walster et al., 1966), the assessment of actual behavior is necessary to illuminate the roles of interpersonal feedback and attraction similarity in the mating context. More studies are needed to examine the effects of interpersonal feedback and probability estimates on approach behaviors.

The fact that the (shared) preferences for physically attractive partners are the main predictors of self-reported dating interest highlights that discrepancies may exist between preferences and actual behavior. Our finding also suggests that similarity in attractiveness amplifies the degrees to which people consider somebody a potential dating partner, just as Walster et al. (1966) originally predicted. Only a few earlier studies confirmed this effect (Berscheid et al., 1971; Folkes, 1982), which was explained by the idea that probabilities of mutual attraction may cause people to adjust their self-reported dating interest. Berscheid et al. (1971) could not demonstrate the effects of chances of rejection on reported dating interest, however. An alternative explanation for the small matching effects on self-reported dating interests in our and Berscheid et al.’s studies may be that goal-related tendencies (i.e., approach motivations) influenced subsequent reports of dating interest. In their experiment, Berscheid et al. told participants they would participate in a dance with the partner of their choice. In our study, participants interacted with a potential mate in a realistic context. The realistic prospect of meeting a person and the real interaction with the person might affect approach motivations, which might affect self-reports on dating interest. Therefore, the degree of reality of the interactions in both studies may be crucial for this small (in terms of

explained variance) attractiveness similarity effect in self-reported interest.

The sex difference in approach behavior also indicates a preference–behavior discrepancy. As predicted, we did not find attractiveness similarity effects for women’s approach behavior. Although the pattern of self-reported dating interest mirrored the one found for men, women’s approach behavior did not. We predicted this sex difference in the preference–behavior discrepancy on the basis of differential parental investment (Trivers, 1972). Consistent with earlier research on mate attraction and communication (Grammer, 1990; Grammer et al., 2000; Van Straaten et al., *in press*), the current findings support the hypothesis that women show more cautiousness than men in approaching potential mates. In the brief encounters with potential mates in our study, women, compared to men, did not engage in relational investment and did not seem to communicate their attraction toward men. It is possible that women need further information concerning one or more conditional mate characteristics (such as trustworthiness, social status, or caring) before giving any signs of attraction (for a description of potential thresholds in mating strategies, see Li, Bailey, Kenrick, & Linsenmeier, 2002).

In the current study, a finding that warrants further explanation is that attractive female participants were rated as displaying more relational investment behaviors. A methodological explanation for this finding could be that raters judged women more positively, in correspondence with the “what is beautiful is good” rule (Dion, Berscheid, & Walster, 1972; Eagly, Ashmore, Makhijani, & Longo, 1991). Yet, this halo effect did not emerge for men. It is also possible that because men often approach physically attractive women, attractive women are more comfortable in mixed-sex interactions. Indeed, frequent positive treatment by others might lead to more socially approved behavior (Langlois et al., 2000). For men, such differential treatment is less likely to occur because women do not approach attractive men as often as the other way round. A final explanation is that attractive women send more ambiguous or misleading signals to elicit more information and investment from their male interaction partner. Grammer et al. (2000) suggested that women may “try to control men. . . . As the man’s goals are unknown to the woman, there is only one possibility when meeting a male stranger: female solicitation should elicit male self-presentation” (p. 376). Because the stakes are higher for attractive than unattractive women (in terms of maximum mate value of eligible mates), they may be more likely to employ this communication strategy. More research is needed to test validity of these explanations.<sup>5</sup>

A second point that needs consideration concerns the generalizability of the findings to people who are in

relationships. That is, would committed people display the same behaviors toward people of similar attractiveness? First, it is possible that committed people on average are more attractive than single people, based on the idea that the most attractive people pair off soon in the assortment process (Johnstone, 1997; Kalick & Hamilton, 1986). Nevertheless, because relationships do not form in closed environments such as in computer simulations (i.e., group boundaries are permeable) and usually not on a single occasion (most people enter the relationship market on several occasions in their lives), the relationship market can be regarded as dynamical and as covering the whole range of physical attractiveness. However, being in a relationship might elevate one's mate value, for it indicates that one is willing to commit oneself and that one is desirable to other people. If this is the case, physical attractiveness might become less important to a person's mate value, and thus, attractiveness similarity might affect a person's approach behavior to a lesser extent. Another factor that might lead to less approach behavior by committed people is that being in a relationship decreases a person's focus on alternative candidates. For example, Maner, Rouby, and Gonzaga (2008) recently showed how romantic thoughts and feelings about the current partner reduces visual attention to pictures of physically attractive opposite-sex others (see also Karremans & Verwijmeren, 2008). Future research should investigate how relational status affects the influence of attractiveness similarity on approach behavior.

### Concluding Remarks

The overarching goal of the present work was to explore the influences of attractiveness similarity on approach behavior, operationalized as relational investment in the first interactions between single, opposite-sex partners. We proposed that people's preferences for attractive mates are independent of their personal motivations. More important, we argued, and showed, that people's preferences are evident in their self-reported mating desires while their motivations transpire in their actual approach behaviors toward the potential mate. As predicted, these findings emerged for men but not for women, suggesting that women, as compared to men, are more cautious in overtly communicating their attraction to potential mates. Moreover, this work showed that the use of confederates in behavioral studies is effective and meaningful, especially because ancillary analyses showed that confederates' behaviors had only minimal effects on our results. Perhaps most important, this work reveals that it is not merely the shared preferences for high-attractive mates that cause positive assortative trends in human mating. Rather, the match in

people's physical attractiveness is likely to determine people's behaviors in the mating context, which differs in women and men, suggesting that mating behavior develops into an efficient means to find the perfect match.

## APPENDIX

The following is a description of the components of relational investment. Semantic differentials appear on each side of a 9-point scale.

1. **Positive:** The use of compliments, good manners, confirmations, appreciation, humor, and positive affective behavior (laughter), which all potentially add to the positivity of the interaction. **Negative:** Disapproval of the opinions or behavior of the other person, rude behavior, no positive responses to jokes, high levels of sarcasm, and emphasizing the negative aspects of the current situation.
2. **Active:** Strong commitment to the conversation, such as through asking questions, introducing new subjects, and sharing personal information. **Passive:** Taking the role of follower, together with one or more of the following: minimal sharing of personal information, not much asking of questions, and indicating to be interested in executing the instructions.
3. **Warm:** Emphatic behavior, attempts to take the other person's perspective, making eye contact, and expressing understanding (e.g., through smiling and nodding). **Cold:** No expressions of empathy, not reacting to affective utterances, and avoiding eye contact.
4. **Responsive:** Friendly and polite, appropriate responses to the other, and stimulation of mutual contributions. **Not responsive:** Tactless responses, impolite, causing a one-sided conversation, and seem unable to know how to deal with silent moments.
5. **Interested:** Expression of interest in the other person through, for example, asking questions (in particular to extract more in-depth information or information unrelated to the instructed topic) and showing attention while the other person is talking. **Indifferent:** Lack of interest in the other person, drawing attention to him- or herself, and little attention while the other is talking.

## NOTES

1. We found one other study, by Stroebe, Insko, Thompson, and Layton (1971) that fits the pattern. However, this applies only to the analysis in which they compared participants with different levels of *self-rated* attractiveness and not with independently judged attractiveness. There is inconsistent evidence concerning the strength of the relations between self-rated attractiveness with other-rated attractiveness (Weeden & Sabini, 2007; see also Murstein, 1972). As self-ratings in general are subject to numerous other influences (e.g., social comparison, self-esteem), we confine ourselves to other-rated attractiveness.

2. Also note the parallel of our definition of responsiveness with "verbal immediacy" and its positive relational consequences (e.g., Mehrabian, 1966).



3. Single frames of the observations frequently result in pictures that are hard to rate because of temporarily nonneutral faces or blurred pictures caused by facial movement.

4. A multivariate analysis of variance on all items of the *relational investment* construct also yielded no sex differences.

5. We also tested for attractiveness-similarity effects on micro-level nonverbal behaviors, derived from studies from Gonzaga, Keltner, Londahl, and Smith (2001); Gonzaga, Turner, Keltner, Campos, and Altemus (2006); Grammer, Kruck, Juetten, and Fink (2000); and Moore (1985). However, because of low frequencies we were unable to analyze these. The low frequencies are likely to be caused by the fact that interaction partners were unacquainted (in contrast to the observation of existing couples and as in Gonzaga et al., 2006), which makes experienced emotions of love and sexual desire less likely. Recall, that even when these emotions are present, frequencies of these behaviors are low (Gonzaga et al., 2006).

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